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Desert Tract; and when I expostulate at having my *Peromyscus boylii penicillatus* compared with "a series from the Franklin Mountains near the type locality [of *penicillatus*]," which mountains lie wholly without the eastern desert differentiation tract, as defined in my mammals of the Mexican boundary line; also, *Peromyscus boylii pinalis* is, in my estimation, the Transition, zonal form of *P. b. rowleyi* of the Upper Sonoran Zone; but, on the whole, I am convinced that mammalogists will regard Mr. Osgood's conservatism, in the matter of recognizing subspecies, with favor. I am still of the opinion that Dr. True's subgenus *Baiomys* should be raised to the rank of a genus.

In conclusion, I take off my hat, and make a low bow to Mr. Osgood, as the author of one of the best papers dealing with North American mammals.

EDGAR A. MEARNES

*The General Character of the Proteins.* By S. B. SCHRYVER, Ph.D., D.Sc., Lecturer on Physiological Chemistry, University College, London. London, New York, Bombay and Calcutta, Longmans, Green and Co. 1909. Pp. x+86.

A review of progress in any field of study can serve a diversity of purposes. As a summary of discoveries made it brings an up-to-date appreciation of current knowledge and makes it ready for convenient reference; and if the résumé has been critically prepared, it may fulfill the almost equally important function of pointing out the limitations of our experience in any domain and the problems awaiting solution. In the latter respect especially, Dr. Schryver's monograph deserves commendation. The author has taken pains to emphasize how inadequate are the more familiar characterizations of the proteins and how imperfect the criteria of purity, individuality, etc., which are currently applied.

To those less familiar with the extensive literature on this subject it may come as a surprise to learn that the time-honored methods of isolation and identification of proteins employed in every biochemical laboratory

are at best extremely defective and unreliable. The investigator will find the refreshing suggestion that the contributions of modern colloid chemistry are far from adequate for an elucidation of the properties of the proteins; so that for some time to come, at any rate, "reliance will have to be placed chiefly on the purely chemical methods for the identification of the proteins."

The monograph is grouped into a review of: (1) The physical properties of the proteins, (2) their general chemical characters, and (3) a very brief reference to the biological methods of identifying proteins. It thus supplements Professor Aders Plimmer's earlier review of the chemical constitution of these compounds.

Among the diverse topics under discussion, that of the behavior of proteins towards acids and bases and the question of salt formation by them has, very properly, received a proportionately large share of attention from the author. This is most timely; for a more profound explanation of these phenomena will go far, we are confident, to explain many peculiarities of protein behavior. The limitation of cryoscopic methods applied to proteins in the present state of our knowledge of colloids is pointed out. The hope is expressed that some elaboration of quantitative reactions may be effected, so that the proteins may be characterized thereby. This is approached most nearly in the constants for the distribution of nitrogen in the molecule ("Hausmann numbers"). It is not unlikely that a tyrosine factor (Millar), or an amino-index (Brown, Sørensen) may give us useful data comparable, as Dr. Schryver suggests, with the constants employed in fat analysis.

In the discussion of the "salting out" of proteins the early work of Dénis is given a recognition which most writers overlook. The expression "prosthetic group" usually ascribed to Kossel is attributed to Hoppe Seyler (pp. 3 and 32). In the discussion of methods of crystallizing egg albumin, the experience of T. B. Osborne<sup>1</sup> and other investigators is overlooked. A similar comment

<sup>1</sup>*Jour. Amer. Chem. Soc.*, 1899, XXI.

might be made on the chapter concerning sulfur in proteins (p. 36).<sup>2</sup> The author's surmise (p. 32) that the Millon's reaction given by gelatin may be due to an impurity is scarcely justified since the work of Pickering, Van Name and Möerner.

The appended bibliography is useful, although by no means complete.

LAFAYETTE B. MENDEL

SHEFFIELD SCIENTIFIC SCHOOL  
OF YALE UNIVERSITY,  
NEW HAVEN, CONN.

#### SPECIAL ARTICLES

##### NOTES ON SOME SALAMANDERS AND LIZARDS OF NORTH GEORGIA

THE following salamanders and lizards were observed at Thompson's Mills, Gwinnett County, north Georgia, during the summer of 1908.

Among the batrachians of the order Urodela, the following salamanders were found.

*Plethodon glutinosus* (Green). This is a thick, stout-bodied, nearly cylindrical species, and is capable of secreting a viscid, milky juice, which has given it the name of the sticky salamander. Specimens found at Thompson's Mills, Ga., in life, were dark bluish slate above, lighter or paler on the belly. The back and head were thinly sprinkled with tiny, grayish-white dots, with a few whitish or grayish dots beneath, mainly on the throat. The sides were mottled with grayish, forming an almost continuous band to the end of the tail. Length  $5\frac{1}{4}$  inches. Several specimens of this salamander were found at the above locality, all beneath logs and the bark of decayed, fallen trees, in shady, damp woods. This salamander is terrestrial in its habits, and occurs in the extreme north as well as throughout the south. It is not uncommon at Thompson's Mills, Ga.

The red salamander (*Spelerpes ruber* Daudin). At maturity this is a thick, plump, short-bodied species, with small, weak legs. Its skin is clear, smooth, without glands, but besprinkled with shallow pits.

<sup>2</sup> Cf. *Jour. Amer. Chem. Soc.*, 1902, XXIV., 140.

The specimens found at Thompson's Mills were  $4\frac{1}{4}$  to 5 inches long. In living specimens the coloration above was brick-red, very much paler (or pinkish) on the belly. The back and head were thickly and uniformly sprinkled with black dots about the size of pinheads. Along the sides these dots became much smaller and more scattered, and were completely wanting along a line drawn along the sides connecting the outer attachment of the legs. The legs were of the same color as the back, and finely dotted with black.

This pretty salamander also ranges over the eastern portion of the country. At Thompson's Mills, I found only two individuals, both beneath rotten logs in hilly woods. This species is of more aquatic habits, which probably accounts for the fact that an examination of hundreds of rotten stumps and logs in the upland woods yielded only two specimens.

*Spelerpes gutto-lineatus* (Holbrook). This is a very pretty, slender and elongated animal, with a slender, compressed tail, longer than the body. Living individuals which I have found at Thompson's Mills showed the coloration described as follows. Beginning just back of a line joining the eyes, a narrow, black stripe extended along the back bone, to a point just behind the legs where it terminated abruptly. Bordering this stripe on either side, is a light grayish-brown stripe beginning at the tip of the nose and extending just above the eyes. These light, dorsal stripes unite on the tail where the black, spinal stripe terminates. On each side beginning from the eye, another narrow, black stripe extended to the tip of the tail, narrowing in proportion as the tail becomes more attenuated. This lateral black stripe was spotted with whitish marks, and its lower edge outlined with white. The belly was evenly and thickly mottled with yellowish and light gray. I found only two specimens of this salamander at Thompson's Mills, both under a log in wet ground near a brook. Their lengths were 7 inches and  $5\frac{3}{4}$  inches, respectively. This salamander is mostly southern in its range.